MARINE REVIEW.

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The Freight Situation.

Ninety cents is the single trip rate on ore from Ashland, Two Harbors and Marquette, and, although the Escanaba rate is generally reported at 65 cents, it is certain that two or three boats have chartered within the past few days at 60 cents. It is not a question of rates but one of getting loads at any price, on account of the trouble with ore handlers at Ashtabula and Cleveland where the bulk of the ore is stored. Marquette is placed on an equal footing with Ashland and Two Harbors as regards ore rates for the reason that the coal trade of that port is necessarily light and the facilities for handling coal are not equal to Duluth and Superior. The ore companies are, of course, selling some ore, the market showing a few signs of early activity during the past week, but the transactions are as yet very light. A stir was caused by the announcement that the Norrie company had sold 350,000 tons to the Illinois Steel Company, and when the Cleveland agents of the mine asked for figures on taking this ore around from Ashland to Chicago by water it was thought that such a move would help the wild carriers. The vessel owners were ready in several cases to carry this ore at $1 a ton, or 84 cents free out at South Chicago, most of them contemplating a triangle trip to Buffalo in such a deal, but the request for figures amounted to nothing, and the ore will go as in the past by rail to Escanaba, from which port it will be taken to South Chicago by the boats of the Inter-Ocean Transportation Company. It can not be learned that any season contracts from Ashland have been made at less than $1 and shippers do not seem anxious to force the season rate below that figure, even if they had ore to offer for the season, but a late announcement yesterday was to the effect that 100,000 tons had been placed among several owners to run to Oct. 1 at 90 cents. While the report of this transaction does not come officially, there are very good reasons for believing that it is authentic.

The exceedingly low rates on grain have demoralized everything. Duluth shippers, having only 2,522,000 bushels of wheat in store on Saturday last, are offering only 1¼ cents but it has not been learned that they have secured any tonnage below 1¾ cents. Lumber offers no assistance, the rates from Saginaw and Bay City being the only ones that have held to the opening figures. Lumber to go from the head of Lake Superior to Buffalo or Chicago is scarce at $2.25 and the shippers are endeavoring to force the rate to $2. In the Lake Michigan trade, the rate from Manistee and Menominee to Chicago has been reduced to $1.37½.

Coal freights remain firm, on account of the urgent demand in the northwest, and the movement would be very heavy if boats could find return cargoes. Rates are strong at 60 cents from Ohio ports to Milwaukee, 50 cents to the head of Lake Superior, 45 cents to Escanaba, Gladstone and Saginaw, 55 cents to Portage and Green Bay, 40 cents to Bay City, 35 cents to Port Huron and Marine City and 30 cents to Detroit.

Reasons for Organizing Under Virginia Laws.

The question has been asked why are the Iron Cliffs and Cleveland mining companies to be consolidated under the laws of West Virginia? One answer is that West Virgina laws are more favorable to mining companies than Michigan laws. Another good reason for the change is a constitutional provision in the Michigan law that says no mining corporation shall own more than 50,000 acres of land. The new corporation may have sought to avoid any difficulty that might arise on this point. It has been an open secret, however, that the Iron Cliffs company, as well as other large mining corporations, own more than 50,000 acres and have held the land for years without molestation.

The famous legal contest over the possession of the Sunday Lake iron mine which the mining company and the fee-owners have waged for four years, has been decided in favor of the company by the supreme court of Michigan. The litigants are nearly all Milwaukee people. The fee-holders, who took forcible possession of the mine on a claim for royalties, carried on operations through Ferdinand Schlesinger the greater part of the past four years. They will now have heavy costs to pay.

Detroit River Changes.

About a mile above the Texas dock, at a point due east from Ballard's reef shoals and about south-east from Ballard's reef stake, Capt. Alfred Hackett has placed a red stake to mark a shoal with only 15½ feet of water on it, that makes out toward the channel. The government ranges taking the place of the private ranges at Windmill point are in operation.

Cleveland Matters.

The American Steel Barge Company recently ordered three ballast and two boiler feed pumps from Hughes Bros., Cleveland.

Clough, Witt & Co., have contracted to furnish a fore and aft compound and a 12x12 high pressure engine for Cleveland parties.

The Born Steel Range Company, placed an order with the Cleveland Rolling Mill Company this week for eighteen car loads of plate for ranges. This is material for two months work. The Born company's new works at Galion, O., will not be completed for six months.

Col. William Ludlow was in Cleveland during the week looking after matters pertaining to the building of the light-house steamer Amaranth, for which the Cleveland Ship Building Company received the contract a few days ago. This boat, to be used in the lake districts over which Col. Ludlow has supervision, will be built to meet the requirements of lake service.

At the yard of the Globe Iron Works Company work is betng pushed on the light-house tenders Lilac and Columbine, being built for Atlantic coast service. The two passenger steamers for the Goodrich Transportation Company will also leave within the time set for their completion. It is expected that the Atlanta will get away about June 1 and the Virginia about June 15.

Commander Gridley, light house inspector for the Tenth district, on Wednesday, presented Keeper Hatch, of the Cleveland breakwater light, with one of the gold bars bestowed by the treasury department for bravery in saving life. These bars suit cases where the recipients have already been rewarded with a medal and are given for each additional act. Hatch's latest act was in connection with the rescue of the crew of the barge Wahnapitae. The presentation was made in the office of the collector of customs and in the presence of a large gathering of government officials and vessel owners.

Mitchell & Co., of Cleveland, prepared a card some time ago making a comparison between rates on grain and ore. The comparison included rates on grain from 1½ to 6 cents. It will be necessary to revise the card. Who would have thought that corn would be carried this season at 1 cent a bushel? In the summer of 1885, wheat was carried at one cent and there have been instances when small lots of grain were taken free at Chicago for ballast by the propeller lines, the bulk of the cargoes being made up of package freight. Canal rates have also been lower than at present. In the latter part of June, 1888, several loads of wheat were shipped from Buffalo at 1⅞ cents; and of corn at 1¾ cents.

The Proposed Home for Veteran Seamen.

Many lake sailors are of the opinion that the United States Treasury holds a big fund to the credit of the marine hospital service, on account of the assessment upon all sailors in past years for the maintenance of the service. The impression prevails that these assessments, previous to the repeal of the law under which they were collected, had accumulated until there were several millions due the men of the merchant marine. Some members of the Veteran Seaman's Benevolent Association, of Cleveland, organized a short time ago for the purpose of securing the establishment of a home for aged and decrepit seamen, were of the same opinion, but they have found on inquiry at Washington that the fund was exhausted long ago. A letter from the supervising surgeon general says there is no such fund and adds that the amount to the credit of the marine hospital service at the present time is only sufficient for its ordinary expenses. This service is now supported by the tonnage tax obtained from vessels in the foreign trade.

The new organization of veteran seamen had hoped to have a part of the money referred to diverted to the establishment and maintenance of the proposed home, if such a fund existed, but they are not discouraged by the answer received from the treasury department. They have an association that is purely beneficial and they propose to go before the next congress with an application for the home on the claim, mainly, that the aged seaman is not wanted aboard ship in any capacity.

Low Rates of Insurance on Ore and Coal.

Some of the Chicago insurance agents seem to be worried over the report that insurance risks on coal, blanket policies, have been taken at 16 cents. This is not a low rate, as some coal has been covered as low as 14 cents; and the rate on ore is also said to have been cut to the same figure. One of the Chicago papers referring to an insurance contract on 300,000 tons of coal 16 cents, charges W. B. Scott & Son, of Cleveland, with having taken the business on the claim that they did not place it in their own companies but in the companies of Elphicke & Co., of Chicago. Both Scott & Son and Elphicke & Co. deny the existence of any business relations between them, and it is certain they have not worked together in this deal if it was made at all. It would be of no particular significance, however, as there is no regard now for the alleged understanding that the rate should be 20 cents with 10 off. Insurance for both Lake Superior and Lake Michigan has been taken by some companies at 14 cents, although it is generally admitted that there is no money in it. The better class of companies are not making the 14-cent rate but charges are lower than last year in all cases The lowest rates last year were 17½ and 18 cents.

The Best Vessels are Owned on the Lakes.

All reports of late from government officials whose offices are connected with the marine interests tend to show the immense gain in tonnage on the lakes, and the increase in high class vessels engaged in this trade as against the poorer class of vessels on the coast and on other inland waterways. There has just been issued from the office of the supervising inspector general of steam vessels a report of the last annual meeting of the board of supervising inspectors, which is accompanied by a great deal of statistical matter regarding the inspection of steam vessels throughout the country during the calender year 1890. From the last annual report of the commissioner of navigation, it was shown that the lakes had more steam vessels of 1,000 to 2,500 tons than the combined ownership of this class of vessels in all other parts of the country. The figures for the lakes were 272 vessels of 439,786.85 gross tons, against 207 vessels of 308,694.74 gross tons in all other parts of the country. This last report from the office of the steamboat inspection service presents a more interesting study. The total number of steam vessels inspected in the entire country during 1890 was 7,200 and, their net tonnage 1,485,022.08 tons. There is owned on the lakes 36 per cent. of this tonnage, or 1841 steamers of 537,732.18 net tons.

Only one local district in the country, New York, has more steam tonnage than Cleveland, while the ownership of both steam and sail tonnage in Cleveland is greater than that of New York. Buffalo ranks next to Cleveland, or third among the cities of the entire country. The number of steam vessels owned in Buffalo is greater than in Cleveland but the tonnage of the Cleveland boats exceeds that of Buffalo.

The tables below present an interesting comparison. They show that the net tonnage of 1,841 steam vessels owned in the ten local districts of the lakes is 537,732.18, or an average of 292.08, while the net tonnage of 3,388 vessels owned in ten leading local districts on the coast and rivers is 713,532.23, or an average of only 210.60. Following is the comparison:

TEN LOCAL LAKE DISTRICTS.

Local District.	Number of Steam Vessels.	Net Tonnage.
Cleveland, O.	304	157,393.17
Buffalo, N. Y.	339	130,266.91
Chicago, Ill	199	58,148.56
Milwaukee, Wis.	210	56,534.97
Detroit, Mich.	161	55,405.25
Port Huron, Mich.	195	45,545.66
Grand Haven, Mich.	192	17,125.62
Oswego, N. Y.	114	10,784.42
Marquette, Mich.	75	3,381 68
Burlington, Vt.	52	3,145.94
Totals	1841	537,732.18

Average net tonnage of lake steam vessels, 292.02.

TEN LEADING LOCAL COAST AND RIVER DISTRICTS.

Local District.	Number of Steam Vessels.	Net Tonnage.
New York, N. Y.	1,117	238,502.46
San Francisco, Cal.	265	97,705.82
New Orleans, La	262	85,649.03
Philadelphia, Pa.	356	66,772.27
Baltimore, Md.	288	57,456.97
Boston, Mass	445	48,028.58
St. Louis, Mo	161	40,542.24
New London, Conn.	215	30,006.87
Savanah, Ga.	147	24,534.49
Pittsburgh, Pa.	132	24,333.50
Totals	3,388	713,532.23

Average net tonnage of coast and river steam vessels, 210.60.

Officers receiving licenses during the year were: Masters, 8,795; mates, 2,039; pilots, 7,961; engineers, 15,129; total, 33,924.

The Boiler Manufacturers.

The American Boiler Manufacturers' Association at its fourth convention in St. Louis last week elected the following officers: James Lappan, Pittsburgh, Pa., president; Philip Rohan, St. Louis, vice-president; James Kenny, second vice-president; Charles Kroeschell, Chicago, Ill., third vice-president; Richard Hammond, Lake Erie Boiler Works, Buffalo, treasurer; E. D. Meier, St. Louis, secretary. It was decided to hold the next meeting in Buffalo in honor of Mr. Hammand, who has done more than any one man toward the establishment and success of the association. Among others present were: D. Connelly, Cleveland Steam Boiler Works, Cleveland, O.; William J. Wickes, Wickes Bros. Boiler Works, East Saginaw, Mich.; J. P. Nicholas, Britton Rolling Mill Company, Cleveland, O.; T. Johnston, Johnston Bros., Ferrysburg, Mich.; G. L. McGregor, McGregor Steam Boiler Works, Chicago, Ill.; John P. Day, Niles Tool Works, Hamilton, O. The avowed object of this association is to secure uniformity among manufacturers, adjust state inspection laws, and raise the standard of boilers.

In addition to the two single ended steel boilers in the Monterey, the war ship launched by President Harrison at San Francisco, there are four tubular coil boilers.

Iron Mining.

VALUE OF LEADING STOCKS.

Quoted by Chas. H. Potter & Co., No. 104 Superior St.

Stocks.	Par Value.	Bid.	Asked.
Cleveland Iron Mining Company	$ 25 00	$ 15 00	$ 16 00
Champion Iron Company	25 00	80 00	90 00
Chandler Iron Company	25 00	39 00	40 00
Chicago and Minnesota Ore Company	100 00	.....	100 00
Iron Cliffs Iron Company	50 00	.....	120 00
Jackson Iron Company	25 00	90 00	100 00
Lake Superior Iron Company	25 00	62 00	65 00
Minnesota Iron Company	100 00	68 00	70 00
Pittsburg Lake Angeline Iron Co	25 00	145 00	150 00
Republic Iron Company	25 00	26 50	28 50
Michigamme	25 00	.....	5 00

The Lake Superior Democrat has learned, through inquiry at the different mines on the Marquette range, that there is now in stock and in transit 1,193,000 tons of ore mined on that range since the close of navigation, or an average of 199,000 tons a month. There are five months left yet of the producing season, and at the same rate the Marquette range would produce for 1891, 1,993,664 tons. It will thus be seen that the curtailment for this range will be, on the present basis of production, 804,664 tons. The same ratio of curtailment in the other ranges, Menominee, Gogebic and Vermillion, which produced 6,010,037 tons last year, means for 1891 a total production in the entire Lake Superior region of but 6,596,000, or a decrease af 2,405,676 tons compared with 1890.

The Pittsburg & Lake Angeline Iron Company will place a diamond drill at the new shaft, located near the east end of the lake to further test the ore lately found there. A vein possessing a thickness of 26 feet had been cut when jasper was encountered. It is the intention to bore a number of holes which will prove up the ground more rapidly than can be done by the slower method of drifting. Work thus far done at this point indicates that the company has found a deposit of much value, and one that will add materially to the output of the property. At the west end some of the former big stopes have been narrowed down owing to the steady drain upon them, and the addition of another mine would help to maintain the good output which has been secured for some years past.—Iron Ore.

The Lake Superior company will soon have in operation a second steam shovel for stock pile service that weighs 60 tons and handles 2,400 tons of ore daily. The shovel was given a trial a few days ago. An independent engine mounted on the beam of the dipper forces the latter into the stock pile, and runs it back and forth, this being convenient in filling and dumping. The engines that work the rotary motion and do the lifting are placed just in front of the boiler. The boiler is of the regular marine type, 5 feet 6 inches in diameter by 9 feet in length, and tested to 150 pounds. The help, five men in all, is the same as that required in operating the style of shovel previously in use.

Ferdinand Schlesinger, president of the York Iron Company, operating the Dunn mine, announces the appointment of Messrs. Runyon, Mack & Co., of Cleveland, as sales agents of the Dunn ore. The Dunn has begun shipments of ore and Supt. Edward Florada expects to have about twenty cars shipped daily. The working force will be increased so as to number 150 or 200 miners, with which the management hopes to reach last season's output. The Dunn has always proved itself to be one of the most productive mines in this district.

Col. Joseph Kirkpatrick, of Palmer, Mich., says that some valuable discoveries have recently been made on the lands adjoining the Palmer mine, now owned by Gen. R. A. Alger and others. When this mine was sold by Mr. Kirkpatrick and his associates to Gen. Alger the lands on which ore is now said to have been found were reserved. Mr. Kirkpatrick, who was in Pittsburgh last week attending a meeting of the company that owns the reserved property, says that diamond drill work warrants immediate development.

The Mansfield mine, Crystal Falls district, has begun shipping from its stock pile of 16,000 tons. The third level is being worked and the shaft is down 15 feet on the way to the fourth level.

The MARINE REVIEW and the MARINE ENGINEER, London, one year for $4. Write the MARINE REVIEW.

CHICAGO LAKE INTERESTS.

WESTERN OFFICE, MARINE REVIEW,
No. 210 So. Water Street, CHICAGO, Ill., May 21.

The ruling of the attorney general, that under the law passed Sept. 19, 1890, Chicago river became subject to the control of the general government as navigable water of the United States, marks a new era in the marine interests of Chicago. It gives vesselmen and the people of Chicago generally some recourse from the grip of selfish interests on the river; it makes possible the preservation of the river for the purpose of navigation and stops the wholesale stealing of public property along its banks. Chicago for many years has turned her back upon her marine interests. Lake transportation came to be regarded as old and out of date by the young generation, educated by the press and not thinking for themselves. The lake was good enough for a starter, this younger generation said, but now the railroads do the business that makes Chicago the metropolis of the west. The bridge nuisance was responsible in a measure for this apathy toward the city's lake commerce, direct railroad influence had still more to do with it, and to the division and non-action of marine men themselves was yet more of it due. When members of the city council were shouting that it was time the river was filled up, it is not surprising that every dock owner took a slice on his own account, and no one put out a hand to hinder. Carter Harrison was a good mayor—for these inroads on the river--and during his several administrations no one was ever stopped in taking what he could get, if it came out of the river. The decision of the United States supreme court in the Escanaba case crushed the hopes of vesselmen that they would ever be able to stop the steady encroachments on their rights to navigate the river. When they were again defeated in the Washington street tunnel affair they gave up for good, until the river and harbor act was passed. They held that under the Escanaba decision the river was at last under the control of the general government. In this most important point of all they are now the winners. I was intensely surprised to read an editorial in the Tribnne, Sunday, admitting that it was perhaps best for the city of Chicago, after all, that the general government should take control of the river. It was an admission of far reaching import. The Tribune was looking, likely, as much for the drainage project as for the interests of navigation, but it proves what has long been held by far seeing vesselmen that the drainage canal and the marine have an indissoluable interest in maintaining Chicago river as a navigable stream. The Hennepin canal, that many vesselmen are inclined to scoff at, is in the same category. When completed the canal will be a most potent factor in aiding the lake commerce to and from Chicago. It will play as important a part between the Mississippi river and Chicago as the Erie canal does between Buffalo and New York. Its construction will add greatly to the weight of marine influence in Chicago. In many ways are signs, taken in connection with the ruling of the attorney general, that the dark days of Chicago's marine are at an end. For the first time in any city campaign the vesselmen's vote was appealed to in the late election. They were besought to vote against Cregier because he had built Canal street bridge, and there is ample evidence that they did so. Last fall Congressman Billy Mason, as attorney for the Illinois Central, played hide-and-seek with his marine constituents about leasing the pier to this railroad. He stayed at home by 3,000 votes in a strong Republican district. It is fortunate that politicians have found that the marine interests have votes just the same as saloonkeepers and other people who are courted to a sickening extent.

With the change in the sentiment towards the marine here, there h been a change of vessel and tug capains towards the public at the brid The right of the people to cross the river has come to be recognized f by those who navigate its turbid waters. Sentiment now is t bridges should be held open no longer than absolutely necessary. men hurry up their tows and avoid keeping bridges open. Steamboat captains use discretion and good sense in moving up and down the crooked stream in a way unknown a few years ago. Those who fear that the marine interests are going to make the government control of the river, obnoxious to the people of Chicago by unreasonable objections to bridges and proper city regulations, are needlessly alarmed. By the recourse of protests to the secretary of war they can now prevent such outrages upon their rights as Canal street bridge. They can stop wholesale steals of the river by greedy railroad companies, but all this is as much to the city's interests as to their own. In other words, when money from the treasuries of railroads buy up a city council and political influence captures a mayor, the people of Chicago have the general government's protection from having their marine interests sacrificed. I suppose a board of engineers will now pass on Canal street bridge. Its decision will be against the bridge, as a matter of course. What the city authorities will then do is entirely uncertain. City Engineer Cook made an ass of himself the other day by stating that the city would fight the war department. He also said that the objection of the vesselmen to Canal street bridge was because they objected to any bridges on the river, and if they had their way they would do away with all bridges. Such drivel as this

shows that Cook would be excellent material for the new mayor's meat ax. It does not represent Mayor Washburne's views by any means.

Until Chicago's bridges are widened, boats 45 feet wide had better keep out. The experience of the C. B. Lockwood, Sunday, is a warning. She stuck for six hours between the piles at the Ft. Wayne bridge, and five tugs and two locomotives pulled without avail until hydraulic jacks were used. After she got fast the water dropped four inches, making the vice in which she was held that much tighter.

Commander Nicoll Ludlow, who succeeds Commander C. E. Clark in command of the Ninth light-house district, arrived from San Francisco, Tuesday, and at once took charge. In the evening he started for Toledo to inspect the new light-house tenders under construction there. Capt. Ludlow is about forty-five years of age, and a pleasant spoken gentleman. In succeeding Capt. Clark he has no easy task, however. Few officers have left more hearty friendship behind them or inspired more general respect for ability and courtesy than did Capt. Clark while on the lakes.

The situation in lake freights is too bad to write about. It is just the way it has been ever since navigation opened, only worse, and worse it will be constantly until some of the boats are taken off the market. How long owners will force their property to a sacrifice here no one knows, consequently no one knows what lake freights will be next week or the weeks when boats wait five or six days for a chance to take corn at a cent a bushel to Buffalo. The next drop must be into the grave. The record of lowest rates to tidewater is now being made. On wheat to New York, lake and canal, 4¼ cents was paid, Monday, and the Ogdensburg route offered to take wheat to Montreal at 4¾ cents and corn at 4¼ cents. Wheat has been paying a through rate of 10½ cents a bushel to Liverpool.

"The J. C. Lockwood is too big," some one remarked to Capt. J. S. Dunham today. "Big boats are what give low grain freights," he replied, and that started a long train of recollections. "I remember." he said, "when after the panic of 1873 grain stopped moving. I had the Pensaukee here waiting for a load. Some shipper had 35,000 bushels he wanted to ship. That was 3,000 bushels short of her cargo. To fill out, I bought 3,000 bushels more,and took the load at 7 cents freight. Some people thought Dunham was out of his head to accept such a rate. Another schooner loaded the same fall with corn for Oswego. The corn cost on board 20 cents a bushel and the freight was 22 cents. These days the owners of the corn would have received some 39 or 40 cents instead of 20 cents. It is because boats are big that grain in Chicago is worth by 10 cents what it is today. If Chicago river is not big enough for the boats then enlarge it. I hope to see the time when there will be twenty feet of water around the lakes and 5,000 ton boats will make good profits in carrying corn to Buffalo at 1½ cents."

Every spring the railroad reporters are astonished to find that the lake and rail lines are a big factor in the east bound traffic out of Chicago. Some new man is sure to write it up as a great discovery. The other day I saw an article on this topic that the associated press sent out as something startling. In fact the time on freight by the lake and rail lines is every bit as good as by all rail. What do you think of this for instance? Two carloads of lemons were on the dock ready for delivery to teams at the New York Central line here just 96 hours after they were delivered to the railroad in New York. The best fast freight time, counting in the time consumed in switching through the miles of railroad yards and delay in unloading, does not begin to equal this. Shippers are acquainting themselves in this regard.

For many reasons there is a well-defined stagnation in lumber carrying here. The trouble seems to be that Chicago has forever lost her once great lumber trade, and the lumber carriers have not come to realize it. Direct rail shipments, and competition with the mills of Arkansas and the southwert are among the causes, but chief of all is the fact that the timber in the region directly tributary to Chicago has been cut. The receipts of lumber here seem destined to decrease year by year.

In Graham & Morton's office there is a man who is a constant wonder to me. The boys say he never sleeps. He says he does sleep, but it is like a horse, standing up. You can never find him out of the office during the season of navigation. It is really said that he stays until 11:30 p. m., when the last boat leaves, and goes to work at 3:30 a. m., when the first boat arrives. "Some day," he remarked Tuesday, "I expect I will die standing at the desk, aud the office boy will sweep me out." The name of this prodigy of work is J. A. Reeves.

No Such Assurance was Given.

PRIVY COUNCIL OFFICE, Ottawa, Canada, May 14, 1891.

EDITOR MARINE REVIEW: Sir John Macdonald desires me to acknowledge the receipt of your letter of the 1st inst., with reference to a newspaper item, to the effect that, "Sir John Macdonald gave assurance some time ago to a deputation of interested representatives of Canadian commercial interests that an appropriation would be secured at the coming session of parliament to begin preparations for the construction of a canal between Georgian bay and Lake Ontario," and in reply to inform you that no such assurance was given.

I am dear sir, Yours Truly,

JOSEPH POPE.

Seventeen Reducing Valves for the Virginia.

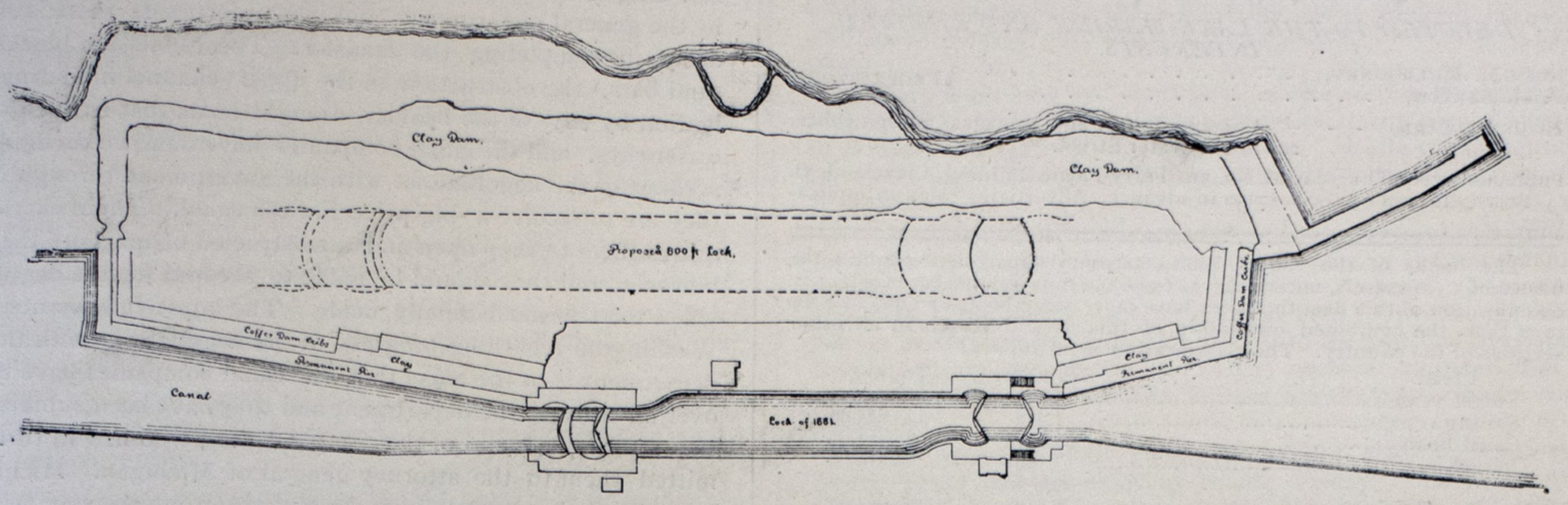
One feature of the twin screw steamer Virginia's auxiliary engines will be that each one will be fitted with a reducing valve, instead of having as most steamers have only one reducing valve for all auxiliary engines. To provide for this, seventeen Foster valves have been ordered. One of 1½ inch is for the steering engine, one 4 inch for main line forward, two 2 inch for the fans, two 2 inch for the feed pumps, two 2 inch for the condenser, two 2½ inch for the dynamo engines, one 2 inch for the ballast pump, three 1 inch for bilge, deck and cabin pumps, one 1½ inch for the capstan, two 2½ inch for the heaters. In each case they will be placed as near the engine as possible. Then steam will not leak through, and in case of the steering engine being suddenly started it will not race, as it does when the reducing valve is located a distance from the auxiliary engine. Eastern builders use the Foster valve almost exclusively.

The Safety of the Sault Lock.

AN INTERVIEW WITH GEN. O. M. POE—ILLUSTRATIONS OF NEW LOCK AND NEW VALVES FOR PRESENT LOCK.

The following authorized interview with Gen. Poe should set at rest the minds of the vessel owners regarding any possible delay that might be caused at the Sault canal by reason of the work of building the new lock, now being carried on by the government under Gen. Poe's directions: Regarding the clay bank left by the excavation of the new lock pit, shown by the accompanying illlustration, he says: "This wall or connection bank is 700 feet long and is built in the canal in prolongation westward of the north wall of the present lock. Its stability is reasonably assured, although it is a source of anxiety, because of the possibility of even a slight delay to navigation. It is capable of withstanding the water pressure, but a heavy shock from a vessel might do damage, therefore extreme care and caution is requested from navigators. The cofferdam is a necessary adjunct to the new lock, and the positive necessity of locating a portion of the dam in the canal, the character of the bottom, the impossibility of driving spiles combine to render the work one of difficulty. The bottom of excavation in the new lock is 53 feet below level of the water in the canal and 35 feet below level of water at the lower end of lock. The northern slope of the excavation extends to the rapids. The leaks encountered so far have had their origin in the rock formation below the constructed dam. It is improbable that there should be a worse leak than the one that occurred in March, yet this was successfully closed under most adverse circumstances in unfavorable weather, and were a leak of similar volume to occur again, it would not greatly hinder or delay navigation of the present lock. The dam is now stronger than ever and its present strength can be maintianed. All that has occurred thus far and all the speculations put forth as to what circumstances might arise during the construction of the new lock were fully discussed in my report made in 1887. All was foreseen and the present plan of proceedure was adopted as the most safe one for interests concerned. The work can not be stopped or retarded until winter for the masonry work can only be prosecuted during warm weather.

"The chance of a repetition of an accident similar to the one last August has been greatly diminished by replacing the emptying valves and their frames with entirely new ones. (See illustration.) The new frames are of cast iron like the old ones, but strengthened wherever possible. The new valves, however, are built entirely of steel and wrought iron. The trunnions are of forged steel, tested to a tensile strain of 63,000 pounds per square inch, nine inches in diameter, while those of the old valves were of cast iron, of the same diameter but were hollow, the bore being six inches in diameter. The two old emptying valves are held in reserve and the two filling valves have each been strengthened by passing a six inch steel rod through the hollow axis from end to end. Each rod is provided with a massive head at one end and equally massive thread and nuts at the other end, by means of which the requisite strain is put upon them to insure support. It is not intended, however, to depend upon the cast iron valve frames longer than the present season. New frames are now being built, composed of rolled steel plates united in the form of box girders. They could not be constructed in time to be put into the lock last winter, but will be in their proper position before the opening of another season. They will be more than ten times as strong as the old ones. The pumps have been overhauled and two more 12-inch centrifugal pumps and two 100 h. p. engines have been ordered."



PLAN OF NEW 800 FOOT LOCK, SHOWING EXCAVATION AND COFFERDAMS.

Fig. 1.
SIDE ELEVATION.

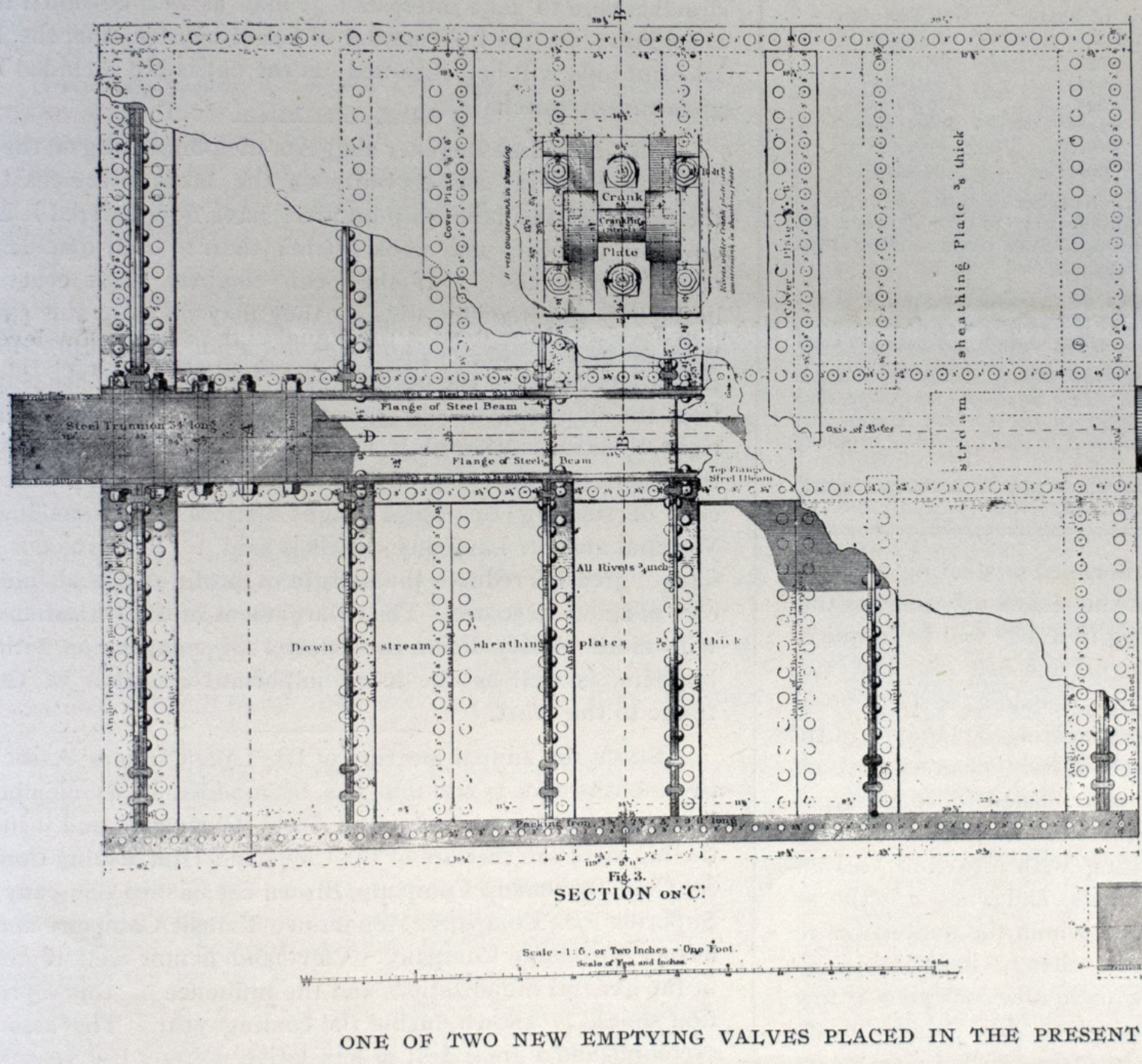
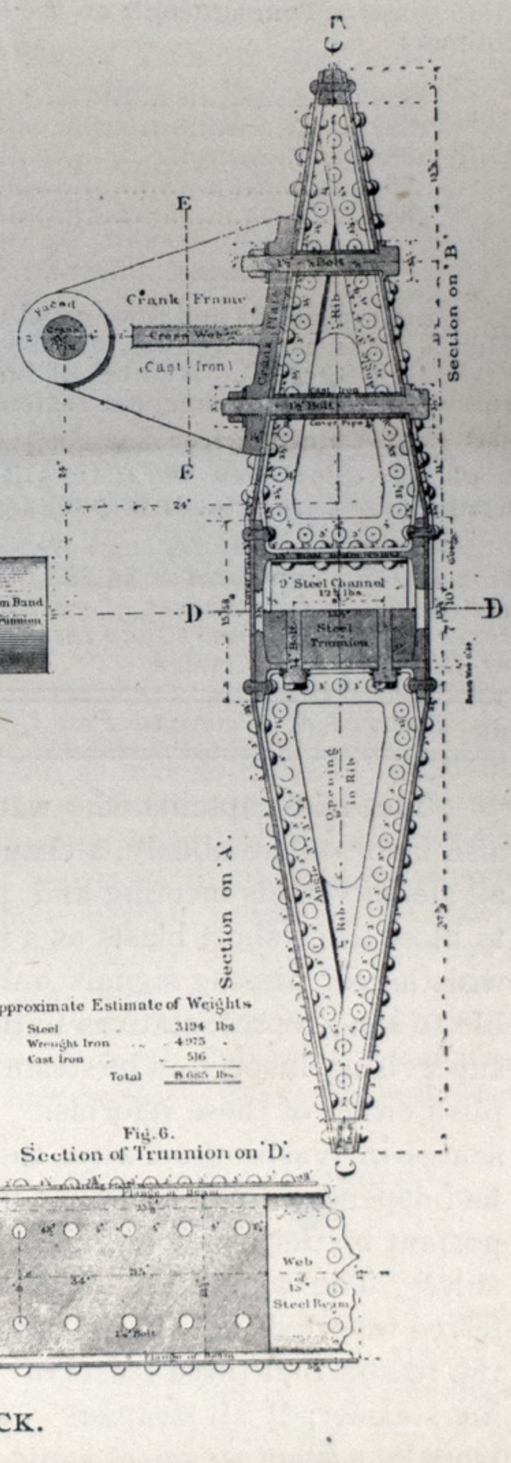


Fig. 3.
SECTION ON 'C'.

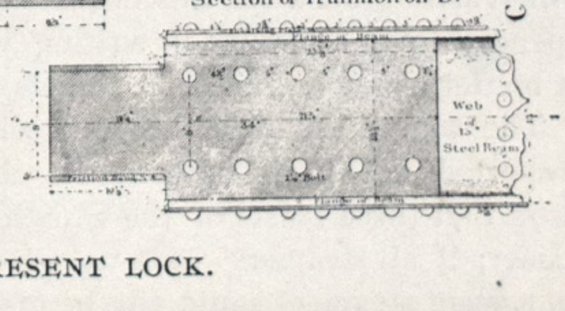
Fig. 4.
SECTION on A & B.



Approximate Estimate of Weights

Steel	3194 lbs
Wrought Iron	4975 "
Cast Iron	516 "
Total	8685 lbs.

Fig. 6.
Section of Trunnion on 'D'.



ONE OF TWO NEW EMPTYING VALVES PLACED IN THE PRESENT LOCK.

THE NEW 800-FOOT LOCK.

The illustration of the plan and location for the new Sault canal lock is the first that has been published and the following particulars were furnished by Lt. Riche. From quoin post to quoin post the new lock will be 800 feet, while the whole length of the walls will be 1,100 feet, the walls being 100 feet apart. The gates will be of steel instead of wood and each leaf of the lower and intermediate gates will weigh 150 net tons, while each leaf of the upper and lower guard gates and the upper gate will weigh 100 tons, 1,200 tons of steel being used for all the leaves. While the new lock will be very much larger than the present one it will be emptied in about the same time, there being six 8 feet square emptying tunnels and a like number of filling tunnels. By the following it will be seen that there will be no necessity for miter sill protection: The breast wall at the head of the lock will be six inches higher than the lower miter sill and the floor will be six inches higher than the lower miter sills; and the miter sills in the new lock will be 6 feet lower than those in the present lock, giving that much more draft to vessels. There will be used in the masonry work 22,000 barrels Portland and 75,000 barrels natural cement, 20,000 cubic yards cut stone, 59,000 cubic feet of backing and 5,000 cubic yards of concrete. The masonry work is contracted to be finished Nov. 15, 1893.

MARINE REVIEW.

DEVOTED TO THE LAKE MARINE AND KINDRED INTERESTS.

JOHN M. MULROONEY, ... } PROPRIETORS.
F. M. BARTON, ... }

HOMER J. CARR, - - - Associate Editor and Manager Chicago Office, 210 South Water Street.

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The books of the United States treasury department contain the names of 3,510 vessels, measuring 1,063,063.90 tons in the lake trade. In classification of this fleet the lakes have more steamboats of 1,000 to 2,500 tons than the combined ownership of this class of vessels in all other sections of the country. The classification is as follows:

Class.	Number.	Tonnage.
Steam vessels	1,527	652,922.25
Sailing vessels	1,272	328,655.96
Canal boats	657	67,574.90
Barges	54	13,910.09
Total	3,510	1,063,063.90

According to the report of William W. Bates, United States commissioner of navigation, 46 per cent. of the new tonnage of the country was built on the lakes during 1889. This is a percentage greater than the work of the Atlantic coast and western rivers combined, and almost equal to the whole work on the Atlantic and Pacific coast. In 1890 the tonnage built on the lakes is but very little less than that built on the Atlantic and Gulf coasts. Tonnage built on the lakes during the past five years was as follows:

	No. of boats.	Net Tonnage.
1886	85	20,400.54
1887	152	56,488.32
1888	222	101,102.87
1889	225	107,080.30
1890	218	108,515.00
Total	902	393,597.03

St. Mary's Falls and Suez canal traffic: Number of boats through St. Mary's Falls canal in 1890, 234 days of navigation, 10,557; tonnage, net registered, 8,454,435. Number of boats through Suez canal during 1890, full year, 3,389; tonnage, net registered, 6,890,014.

Annual tonnage entries and clearances of the great seaports of the world, for 1889: New York, 11,051,236 tons; all seaports in the United States, 26,983,315 tons; Liverpool, 14,175,200 tons; London, 19,245,417 tons.

Tonnage passing through Detroit river during 234 days of navigation in 1889, amounted to **36,203,606** *tons. Ten million tons more than the entries and clearances of all the seaports in the United States, and three million tons more than the combined foreign and coastwise shipping of Liverpool and London.*

Entered at Cleveland Post Office as Second-class Mail Matter.

THE lake captains who want uniformity in steering and who also favor, unanimously, a change in the steamboat rules, so that all steam vessels meeting and passing in a fog will be required to blow three short blasts as a fog signal and use one and two whistles for passing signals only, must decide as early as possible to send representatives to the next meeting in January of the supervising inspectors of steam vessels if they desire to accomplish either of these reforms. The lake masters were not represented in Washington when this board met last January. They had depended upon a request in writing with regard to this important matter of fog and passing signals, and what was the result? The committee of the board to whom the matter was referred reported that they "deemed the change inadvisable, for the reason that three blasts of the whistle now indicates a towing steamer; if all steamers were to give three blasts of the whistle, towing steamers could not be distinguished from steamers without a tow." Of course three blasts of the whistle indicates a towing steamer, but the lake masters who asked for a change were not so ignorant as not to know this. It had been discussed in their meetings but they were unanimously of the opinion that there is less danger of running down a steamer's consorts after meeting her than there is under the present rule that permits of one blast of the whistle being blown for a fog signal as well as the more important porting signal in passing. Some of the most disastrous collisions of late have been laid to this conflict of signals and the proposed change is a matter of vital importance, on account of the growing commerce of the lakes and the crowded condition of their connecting waterways.

IT is now eight months since the river and harbor act of the last congress authorized the purchase of the Portage lake canals by the general government, and it is unfortunate there is such a delay in completing the transfer. The canals are blocked by sand bars, the obstruction in the upper channel hindering navigation by any of the heavier draught boats that frequent these waterways, and the canal companies have done no dredging, on account of the negotiations with the government through which they are to receive a big price for the canal. Their charter requires them to keep open and unabstructed channels to the lake, however, and they should be made to account for the negligence when the transfer is finally made. The latest information from Washington regarding progress of the negotiations with the war department is to the effect that the canal companies have turned over all titles to the department and they have been submitted to the attorney general of the Uuited States, who has in turn submitted them to the attorney general of Michigan. Michigan's law officer has made a visit to Houghton in company with one of the army engineers and is still engaged in a research regarding detail pertaining to the titles. There is little else to be done in Washington and the announcement of the transfer is expected shortly. The war department is thorough in its work, but government red tape in this matter has certainly worked a disadvantage to lake interests. It may as well be noted in this connection, for the information of vessel owners, that the Torch lake cut tolls will be continued, as the cut is not included in the government purchase.

THE Maritime Register suggests in commenting on the work of sending several vessels built on the lakes to the coast, that the field that the lake ship-builders have now entered is a wide one, and that they may look further than to their own countrymen for business. "If they can compete with coast shipbuilders," the Register adds, "they may do more and compete with foreign shipyards, and it is not among the improbabilities that a large part of the ocean steam tonnage may be supplied from the shipyards of our great lakes." This is a hint in the right direction, although it has not yet been fully demonstrated that there is sufficient profit in sending boats to the coast. The cost of sending the large freight carriers in sections down the Welland and St. Lawrence canals is said to be $10,000. This figure greatly reduces the margin of profit on a boat built at a cost of about $150,000. The enlargement of the Ganadian canals will more clearly define this matter of competition with coast builders, as well as the more important question of through traffic to the coast.

SINCE the annual meeting of the Lake Carriers' Association, two months ago, 35,000 tons has been added to its membership. Every ton of this was secured from Cleveland, and it includes the big steel ore carriers of the Cleveland Iron Mining Company, St. Clair Steamship Company, Brown Steamship Company, Lake Superior Iron Company, Menominee Transit Company and Minnesota Steamship Company. Cleveland is now well represented in the general organization, and the influence of this representation should be shown during the coming year. The association accomplished a great deal in legislative matters last year, but its efficiency can be still further increased by united action.

THE last congress passed an act providing for a load line, to be marked by vessel owners on their own craft. Some of the writers on daily papers would have vessel owners believe that this regulation includes lake vessels. This is a mistake as the law refers to sea going vessels and is very plain in its provisions. The object is to protect American vessels in the foreign trade, as it has been claimed that English officials have discriminated against our vessels in not allowing them to load to a safe and reasonable depth.

THE "MARINE REVIEW" FOR ONE YEAR AND "BEESON'S HAND BOOK"—$2.50.

Around the Lakes.

Five hundred bushels of the Monteagle's grain cargo was wet by the breaking of a pipe at Erie.

Falcon has pumped 150 tons of ore from the Kasota. He is using the schooner Barkalow for a lighter.

Steamer Niko was short 110 bushels on a Chicago wheat cargo of only 44,000 bushels carried at 1⅛ cents.

A. H. Shafer and E. Harlock, of Detroit, have purchased six-sixteenths of the steamer Oswegatchie for $3,000.

The Iosco recently launched from Wheeler's yard, took 45 cent coal from Toledo to Duluth. David Hutchinson is master.

Sturgeon Bay Canal Company libeled the schooner Foster for canal tolls. Leatham & Smith, Sturgeon Bay, will contest the case.

The propellers Fred. Pabst and Thomas Davidson have begun work in the Escanaba ore trade on an old contract, of which 50,000 tons remain.

About 2,200 tons of package freight, mostly flour, was taken out of the Northern Line propeller North Star at Buffalo a few days ago in seven hours.

The tug Favorite released the Raleigh and Camden from Gray's reef. The Raleigh was leaking and was towed to Duncan City for examination.

The Eber Ward was refused clearance at Duluth with Canadian bonded wheat to Kingston. There has been no provision to cover this trade since 1885.

Home companies are again after the foreign underwriters. A bill in the Illinois legislature would require foreign companies to deposit $200,000 with the state.

The steamer H. S. Pickands will tow the schooner Marengo this season. The Marengo will be sailed by Capt. Berlin, last season in the schooner Canton.

The Wawatam's independent condenser,which throws a continual stream of water, gave Detroit people the impression that she had struck a rock and was working a siphon.

Deputy Collector Lundberg, of Chicago, was merely the agent for the purchase of the steamer City of Green Bay, and is in no way liable to dismissal and a heavy fine.

Capt.W. H. Landgraf was acquitted at Milwaukee on the charge of shooting Charles Wilbur, a sailor, with intent to kill. It was the second trial, the jury having disagreed at the first.

Just 3,200,000 feet of lumber was delivered in Chicago a few days ago from Baraga, Lake Superior, by the propeller Schoolcraft and her three barges, Bourke, Nester and Keweenaw.

John O. Lindquist and others, of Menekaunee, bought the City of Green Bay from Chicago parties for about $2,500. It is expected she will be repaired and put in the Lake Michigan coast trade.

Captains arriving at Sandusky, Friday, reported a heavy fog and smoke over the north passage. They claim the Dummy fog horn was not blown until morning and several boats were delayed all night.

Dredging on the new Duluth-West Superior channel will be finished in a few days. West Duluth channel in St. Louis bay will now be dredged, so that lumber carriers can take big loads from the saw mills.

The barge W. L. Peck was sold at Tonawana, Monday, by the United States marshal to Charles Schwinger for $2,000. Claims against her aggregate $3,500, and it is thought she was bought in for the owners.

Nearly $300,000 has already been expended in dredging and breakwater work preparatory to the erection of the new Lake Shore ore docks at Ashtabula, and this amount will be more than doubled before the work is finished.

Here is an indication of the dull opening in the ore trade: The steamers W. H. Wolf, Fred Pabst and Thomas Davidson failed to obtain ore cargoes at Escanaba and were compelled to go to Buffalo in light trim for coal.

The Canadian schooner Nett. Woodward met the Commodore and $1,000 will not repair the damage. The captain of the Commodore stopped at Detroit and libiled what was left of the schooner and she will be sold at marshal's sale.

The Lukens Iron and Steel Company, Coatesville, Pa., will furnish the plates for the two government boats building by the Globe Iron Works Company, Cleveland. This company recently sold 10,000 tons of ship plate to the American Steel Barge Company.

There is no long and short haul clause in the lake marine. Saturday 1⅛ cents a bushel was paid fot carrrying corn, Chicago to Buffalo, and 1½ cents to Port Huron. While 1¼ is the rate on wheat from Chicago to Buffalo, 1½ cents is paid from Detroit to Buffalo.

The collector of customs and the fishery overseer at Windsor have notified the Canadian marine department of the scuttling of a vessel at Windsor with 7,000 barrels of lime on board. The vessel had to be sunk, as the lime had caught fire. Owners are now asking permission to dump the lime into the Detroit river, but this is contrary to law and the fishery overseer contends that it will kill the fish. Sir Charles Tupper has the matter under consideration.

The new Canadian Pacific steamship Manitoba and the North Wind had an exciting brush, Friday. They left the Sault together, the Wind leading the Manitoba a boat's length or so. Try as hard as she could the Manitoba failed to gain an inch. The long stern chase was kept up till Whitefish point was reached, when the Manitoba gave up in disgust and parted company with the North Wind, although their course is together as far as Keweenaw point.

Salt water divers wear cutlasses which they use in case they are disturbed by sharks, but Divers Cumfrey and McCullough, engaged in placing dynamite cartridges in the wreck of the Ben Hur, will wear knives for the purpose of cutting themselves loose when the current tangles the lines about them. Cumfrey came near losing his life last week by getting entangled. The cartridges used contain from 40 to 100 pounds of dynamite. Captains Johnson and Baker, Detroit, superintended the work.

For three years the railroads east of Buffalo have been waging war on the Erie canal. Canal boat men reduced their rates one day last week to 3⅛ cents a bushel on wheat and 2¾ cents on corn from Buffalo to New York. Taking out the elevator charges at Buffalo the boats only received 2¼ cents for wheat and 1⅞ cents for corn. The rail rate of 4½ cents a bushel on wheat and 4¼ cents on corn took the business, time, in view of the high prices of grain, more than making up the difference. The war is an expensive one to the railroads also. Counting out Buffalo elevator charges they are receiving but 3⅝ cents a bushel on wheat and 3⅜ cents on corn for a rail haul of 425 miles.

"When I heard of the Raleigh's mishap on Gray's reef," said Capt. John Quinn, "I began at once to think of the schooner Sheldon. The Raleigh had the Camden and Sheldon in tow at the time she struck. The Camden went on but the last named escaped. A singular fatality seems to attach itself to propellers that tow the Sheldon, but she herself usually goes scot free. When the Ohio was sunk a year ago by the Siberia in the Sault river she had the Sheldon in tow, but the latter came out unscathed. When the Kasota was sunk by the City of Detroit last fall she had the Sheldon in tow, but the latter, as usual, sailed down as though nothing had happened It is a singular coincidence, to say the least."

P. M. Church gives the following notice to captains: "Having been awarded the contract for patrolling the river for the United States government and earnestly desiring to perform the best service possible, I would respectfully ask that you notify me, either by letter at the canal office, by telephone, or verbally of the absence or displacement of any buoy from its proper position in the channel. The captain of the patrol boat has been instructed by me that should he find any boat aground, to go to such boat and offer to carry any message, or messenger, to the nearest telephone station on the river, provided it does not interfere with the performance of his duty in caring for the buoys and this without charge. Telephone address, ship chandlery, paint and oil store, No. 7; residence, near Perry's dock No. 4. Word may be left at the ship chandlery of P. M. Church & Co., Savings Bank block, or at the coppersmith's shop of P. M Church & Co.. located near the canal pier, opposite Hickler's machine shop."

The keel of the first American steel sailing vessel will be laid in the Loring shipyard in South Boston. Her dimensions will be: Length 220 feet, breadth 36 feet 6 inches, depth 22 feet 6 inches, tonnage 1,398. She will be bark rigged and is intended for the Australian, China and Japan trade.

Davidson's Boats—Saginaw Valley Affairs.

Special Correspondence to the MARINE REVIEW.

WEST BAY CITY, Mich., May 21.—Owing to delays in the work Capt. Davidson failed to launch two of the "Big Four" as expected last week, but the City of Glasgow was launched Saturday afternoon. The vessel was not securely held and some of the ropes began to break before all the blocks were split out from under the keel. The stern started down the ways ahead of time and the word was given to cut the remaining ropes. The stern had reached almost to the water, however, before the bow started, and it looked for a few moments as if the vessel would hang, but it did not, and the boat was floated without damage. The Schlesinger ensign a red flag, with a black center bearing the letter S, floated at the top of the foremast, but the impression is gaining ground that Capt. Davidson has been left with a half million dollars worth of new vessel property on his hands in the middle of a very dull season. I heard the other day that he received $20,000 on each of the vessels from Schlesinger when the vessels were in frame, but that when he went after the second installment of money he came back empty handed. Another demand was made for money when the boats were nearly completed, with the same result. This however, did not deter him from going ahead with the work, and a big fight in the courts may be the result of the deal. This, however, is only a rumor, which like all others regarding these boats, Capt. Davidson will neither affirm nor deny. The last of the "Big Four" City ,of London, will be launched next week if unforseen delays do not occur. The City of Paris will be launched, Thursday, of this week.

Ex-Congressman Wheeler was in Detroit the other day and to a reporter there vouchsafed the information that there would be an awakening in shipbuilding by fall, and while he did not look for the building of any more freight vessels this year, a number of passenger boats would be built. He thinks the importance of the lakes as a traveling route is not yet fully appreciated by the public, but believes that they are now slowly coming to the idea that a lake trip is one of the most enjoyable methods of travel, and that the passenger business on the great lakes will become a great factor in their business within the next few years.

The lumber shipments continue to be quiet. Several vessels have arrived in port within the last few days which have not yet secured loads. Lumber dealers here are having a war with the railroads, which in the past few years have taken a large amount of the work away from the vessels, and it may result in an increased demand for tonnage for shipping by water. All of the railroads are making rates which discriminate against the Saginaw valley, and as a result the local manufacturers say that they cannot continue their rail shipments in competition with outside cities. Unless the railroads accede to the demands of the manufacturers, the building up of the Saginaw valley as a distributing point will be stopped, and the old style of shipping all lumber to lower lake ports in the rough will return.

The much talked of vessel owners' union, which before the opening of the season was going to do so much to increase the profits of the trade, by compelling all shippers to deliver their lumber free on the rail, and consignees to take it from the rail, has not been heard from since navigation opened. The Saginaw valley is the only point of importance on the lakes where the plan of paying 'longshoremen by the hour is rigidly enforced. This plan, however, is not without its advantages. As a return for the high wages paid, the 'longshoremen's union agrees to refuse to load any vessel which takes a cargo out of the city at less than the going rates.

A Milwaukee Sale of Ore—The Ferdinand Schlesinger.

Special Correspondence to the MARINE REVIEW.

MILWAUKEE, WIS., May 21.—A sale of 62,000 tons of non-Bessemer ore, the product of a mine in which Milwaukee parties are interested, was made on Monday at the exceedingly low rate of $1.50 per ton on the dump. The sale was a forced one, as money had to be realized to pay the mine employes. In the light of the existing situation a number of similar deals may be necessitated before long. Purchasers of ore at such figures can afford to carry it in stock piles at lower lake ports until consumers are found, as they are sure to realize handsomely in the end.

The steamer Ferdinand Schlesinger, in naming which, the builders, no doubt, had in view an object that unfortunately for them was not realized, is nearing completion now and will go into commission when business offers. As matters have turned out the construction of the Schlesinger was an unfortunate move; for unless a marked improvement in the business of the lakes occurs before the close of navigation the money she cost will purchase considerable more first-class tonnage than her measurement represents.

Arrivals of coal are becoming more liberal, but they are still far short of the early receipts of the past three or four seasons. The Inter-Ocean Transportation Company's fleet has at last made a start in the ore carrying business between Escanaba and South Chicago. The Wolf & Davidson Steamship Company's fleet made a start last week, ostensibly for Escanaba to carry some of their $1.05 ore held over from last season, but in reality for Buffalo to come back with coal cargoes. It is an easy matter to figure that even large steamers cannot run from Chicago or Milwaukee to Buffalo in light trim and return with coal at 60 cents per ton without losing money. Of the lower lake steamers which wintered here the James Pickands was on Monday moved to the head of an unfrequented slip where she can lie undisturbed until her services are needed The steamer Cherokee and her consort Chippewa which brought coal cargoes to this port, left on Monday evening for Marine City in light trim, to go in ordinary there unless a lumber carrying contract can be secured for them at once. It seems tough to send a steamer like the Veronica from Milwaukee to Duluth light, to load wheat for Kingston at 3½ cents per bushel, but this has been done, in the expectation that she may possibly come out whole on the round trip, with a Lake Ontario coal cargo up. Vessels outside of the regular liners now engaged in carrying grain from Chicago to Buffalo at the existing ruinously low rates depend upon the returning coal freight to cover expenses and possibly afford them a slight margin.

The new line of the Milwaukee & Eastern Transit Company is picking up quite a freighting business. There is not the slightest doubt the steamers will carry large numbers of passengers to St. Joseph and Benton Harbor, during the fruit season especially. A grain elevator is to be erected at St. Joseph for the benefit of the line in its through winter traffic to the seaboard.

Toll Discrimination—Reciprocity in Wrecking.

Special Correspondence to the MARINE REVIEW.

KINGSTON, Ont., May 21.—At last forwarders are busy and during the past two weeks have had about all they can comfortably do. How long this state of affairs will last is uncertain, not because there is no grain in the west to carry, but owing to the many opposing circumstances, hitherto unknown, which now exist. The keen competition now offered by the American route, which has accommodated cargoes from Chicago to New York at 4 cents a bushel, must be felt here severely; and the Ogdensburg matter is by no means settled yet. The agitation concerning the latter is causing to crop up information that was not generally known in marine circles, nor by the government officials. It has been contended that the refusal to refund canal tolls on grain, destined for Montreal, and stored at Ogdensburg, is discriminating against the United States and collides with an existing treaty. It response to this it has been asserted, and with considerable effect, that the United States government does not permit Canadian vessels to navigate the Burlington canal and that the Erie canal is reserved for American bottoms also. This agitation has placed marine business in a state of uncertainty, which, besides causing great anxiety, will lower rates.

The matter of reciprocity in wrecking would have been brought up in the house of commons, now in session, before this, had not it been that it will be discussed at Washington in a few days. The Hon. George A. Kirkpatrick, who has the affair in charge, will not place his bill before the house until he sees what the Americans will do. The desire for this special reciprocity has increased of late years.

The Algonquin brought her largest load here from Duluth on Saturday. It was 68,500 bushels and was unloaded in a few hours. Capt. John Oliver has purchased from Capt. F. Barnhardt the schooner Pilot. He will engage in the coast trade. The schooner Gulnair, which was sunk at Alpena, Mich., has been raised and pumped out. She is in good condition. The yacht Atalanta, which sailed several years ago for the America cup in New York harbor, is being fitted out in racing trim again. She will enter races this summer.

A new inspection act is to become law in Canada, and be known as the "Inspection of Ships Act." The inspectiou will be annual and the fees 3 cents per ton. The inspectors will be required to inspect not only hulls, but masts, spars, sails, rigging, anchors, cables ehains, boats and other parts of the equipment. Penalties may be imposed on masters or owners neglecting to have their vessels inspected once a year.

The marine association is agitating a special inspection of Canadian coasting vessels. British vessels registered in England and engaged in coasting in Canada, do not have to pay coasting duties. The board think the inspection should be a charge against the revenue.

Capt. Thomas Donnelly, marine inspector, has been selected by the government to proceed through the northwest territories on a tour of inspection. There are now many fine steamers on the rivers in that country. The captain will be absent about six weeks.

Official Numbers and Tonnage.

The bureau of navigation, William W. Bates commissioner, assigned official numbers to the following lake vessels during the week ending May 16: Steam—City of London, Port Huron, 2,005.85 tons gross, 1,675.02 net No. 126,731; Frank W., Port Huron, 93,12 tons gross, 46.56 net, No. 120,839; Keystone, Marquette, 95.96 tons gross, 47.98 net, No. 161,014; Nelson Bond, 21.86 tons gross, 10.93 net, No. 130,537; Thistle, Chicago, 49.14 tons gross, 28.46 net, No. 145,583.

Death of J. Emory Owen.

The announcement of the death of J. Emory Owen, of Detroit, on the 12th inst. caused many expressions of sorrow among vessel owners. J. Emory Owen with his brothers, sons of John Owen, were actively interested in the Detroit Dry Dock Company up to a short time ago. He has been interested in vessel property since reaching manhood, and at his death he owned the propellers John Owen and J. Emory Owen and their consorts, the Michigan and the Nicholson, valued in all at about $340,000. He had been successful in other lines and left a large circle of friends among men of the lake marine.

One Year's Work—11,510 Horse Power.

There are few if any engine building concerns in this country that have turned out as many engines in one year as has S. F. Hodge & Co., Detroit. The work consists of four triple engines and ten compounds. The cards from which the horse power was figured were taken when the boats were loaded. The names of boats, sizes of engines and horse power are as follows: Alex. Nimick, 20, 32, 54x42, 1,100 h. p.; Fred. Pabst, 21, 33½, 57x42, 1,180 h. p.; C. B. Lockwood and Emily P. Weed, 23, 37, 62x42 1,560 h. p. each; Mannie, 19, 36x48, 400 h. p.; Edward Smith, W. H. Sawyer, H. W. Sibley and C. H. Bradley, 25, 48x40, 700 h. p. each; Byron Whitaker, 24, 46x40, 650 h. p.; Andrew Smith, 19, 36x36, 400 h. p.; J. W. Moore, and Colgate Hoyt, 26, 50x42, 780 h. p. each; Langell Boys, 16, 32x30, 300 h. p. These were built during the season 89-90.

Work of the Ship Yards.

The new lumber propeller O. O. Carpenter, now in the water at the yard of the Jenks Ship Building Company, Port Huron, will be ready for service shortly. She was built at a cost of about $35,000.

Capt. Wm. Dulac, Mt. Clemens ship builder, writes that the Norwalk which was held in Clinton river by low water, reached Detroit all right and left for Marquette for a load of lumber to Cleveland. She was launched last December and since that time the water dropped one foot.

Wrecks and Heavy Losses.

The schooner W. C. Kimball can be included among the missing vessels of the present season. She went down with four lives on Lake Michigan on the 8th inst. The Kimball was owned by Capt. Kimball, of Manistee, and was valued with her cargo at $1,500.

The propeller Raleigh, which was ashore with one of her consorts, the Camden on Gray's reef, is thought to be badly injured. Her bottom is in bad shape and the bed plate of her engine is said to be broken.

Latest Invention in Gas Engines.

(For Illustration see Page 1.)

At the works of the McMyler Manufacturing Company, Cleveland, an electric gas engine, invented by John B. Hicks, has been in successful operation during the past week. The engine seems to fulfill all requirements for a launch or yacht engine, and a hull is being built by H. D. Root, Lorain, O., into which one of similar construction will be placed. The great advantage over other gas or naptha engines is in the amount of power developed, for, while other engines have one explosion in the cylinder to two revolutions, the Hicks' engine by reason of having two cylinders explodes at every revolution. By this means a ten horse power Hicks engine weighs but 1,700 pounds. The explosions are caused by electric sparks, thus doing away with the perpetual flame necessary to other engines. A gallon of 74° gasoline will operate a 10 h. p. engine one hour. For further particulars apply to the MARINE REVIEW.

After a delay of about five months, the City of Paris, which sustained damage to her machinery, will in a few pays arrive in New York. New engines of the same type have been fitted to replace those damaged, a new shaft has been made, and Howden's system of forced draught has been introduced. This long delay is accounted for when it is known that the engines of this steamship are 10,000 i. h. p. We are approaching the 60,000 h. p. steamer that the English designer, Barnaby, has described. Two new steamers, each of 14,000 tons, nearly 4000 more than the City of Paris, are being built on the Clyde for the Cunard line.

"THE MICHIGAN"

ISSUES POLICIES ON HULLS AND CARGOES ON FAVORABLE TERMS. IT IS FOR THE INTEREST OF THE OWNERS OF THE LAKE MARINE TO BUILD UP A HOME COMPANY BY THEIR PATRONAGE.

AGENCIES AT PRINCIPAL PORTS.

Insurance Company of North America.

INCORPORATED 1794.

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CHARLES PLATT, President. WILLIAM A. PLATT, Vice-President.
EUGENE L. ELLISON, 2d Vice-Pres't. GREVILLE E. FRYER, Sec'y & Treas.
JOHN H. ATWOOD, Assistant Secretary.

Capital, paid up in cash..... $3,000,000 00
Assets..... 8,951,518.83

Commercial Union Assurance Company, Limited,

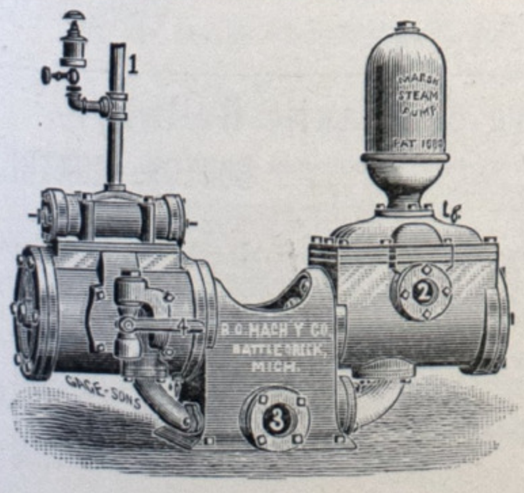
OF LONDON.

INLAND MARINE DEPARTMENT.

INSURES HULLS, CARGOES and FREIGHT.

DAVID VANCE & CO.,
General Agents,
MILWAUKEE, WIS.
Local Agents at all Lake Ports.

TO ENGINE AND BOILER MAKERS.—Office of Light-House Engineer, 9th and 11th Districts, Detroit, Mich., May 8, 1891. Sealed Proposals will be received at this office until 4 o clock P. M., of Monday, the 1st day of June, 1891, for furnishing the boilers, machinery, etc., for eight steam fog signals, in sets of two, delivered at the Light-House Depot, Detroit, Mich. Plans, specifications, forms of proposal, and other information may be obtained on application to the undersigned. The right is reserved to reject any or all bids and to waive any defects. WILLIAM LUDLOW, Light-House Engineer.



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Absolute Actuation and Regulation Without Use of Tappets, Levers or other Mechanical Connections.

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Smaller Sizes With or Without Hand Pumping Attachment.

Exhaust Returned to Boiler. Heats Feed Water Forty to Fifty Degrees, according to tests made by Prof. M. E. Cooley, of the University of Michigan.
Steam Valves Actuated by Direct Boiler Pressure.

Has Fewer Wearing Parts than ANY OTHER Steam Pump.

For Circulars and Prices, address

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or BATTLE CREEK MACHINERY CO., Manufacturers, Battle Creek, Mich.

PROPOSALS FOR CHANNEL EXCAVATION. U. S. Engineer Office, Buffalo, N. Y., April 30th, 1891. Sealed proposals, in duplicate, for excavation of material at the followng points, will be received at this office until 2 P.M., on Saturday, the 30th day of May, 1891, and opened immediately thereafter in presence of bidders: Olcott Harbor, N. Y., between the piers, Oak Orchard Harbor, N. Y., between the piers, Niagara River, N. Y., near Strawberry island. The attention of bidders is invited to Acts of Congress, of February 26, 1885, and February 23, 1887, vol. 23, page 332, and vol. 24, page 414, Statutes at Large. Specifications, general instructions to bidders, blank forms of proposal, or necessary information, will be furnished on application to this office. The United States reserves the right to reject any or all proposals. AMOS STICKNEY, Major of Engineers, U. S. Army. May 28

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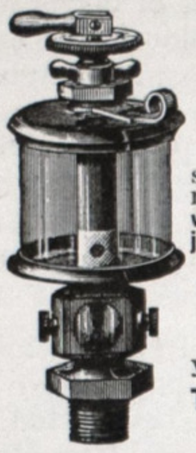

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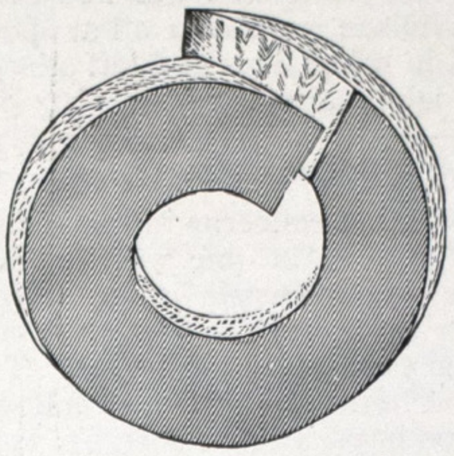

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☞ In ordering, give **exact** diameter of Stuffing Box and Piston Rod or Valve Stem.

Self-Lubricating, Steam and Water Tight.

Less friction than any other known Packing. Never grows hard if directions are followed. Does not corrode the rod. **Every Package Fully Warranted.**

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Space under this heading may be used gratis by our advertisers or subscribers to call attention to vessels or any craft, machinery, new or second hand, that they may have for sale. Those wanting machinery of any kind, or wishing to purchase vessels, are invited to take advantage of the same offer. Each item will be limited to three lines. Letters concerning same must mention number attached to item and be addressed MARINE REVIEW, 510 Perry-Payne Building, Cleveland, O.

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58—Crosby Indicator, used only four times, for sale cheap.

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Dimensions, 76 feet long, 15½ feet beam, 7 feet deep, with an engine 18 x 20; steam supplied by steel boiler 6 ft. 8 by 10 ft. 8.

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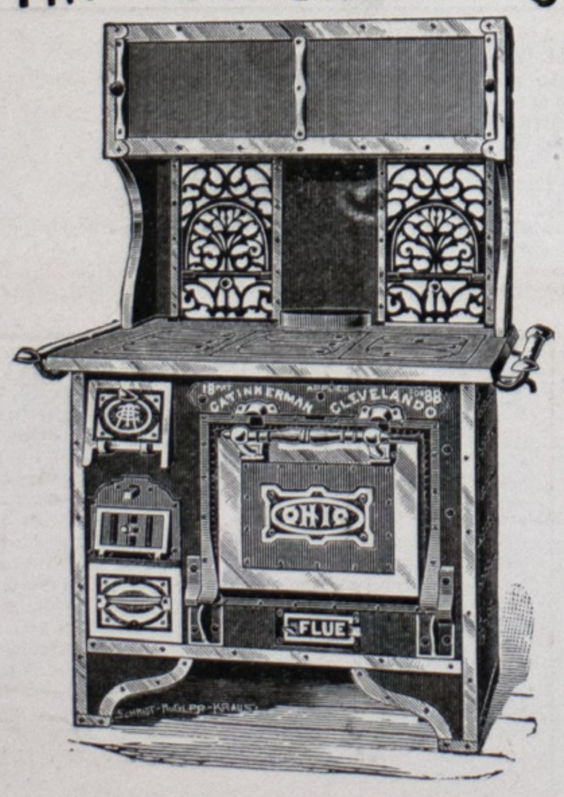

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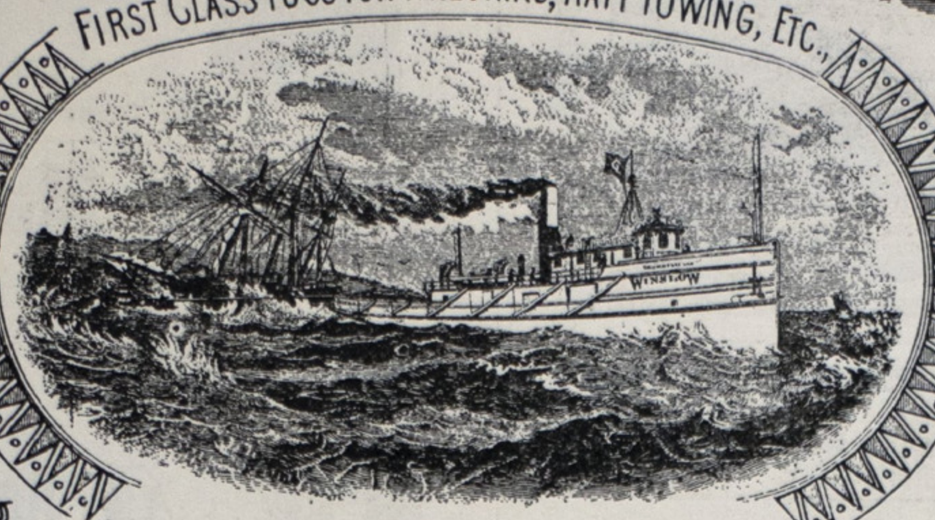

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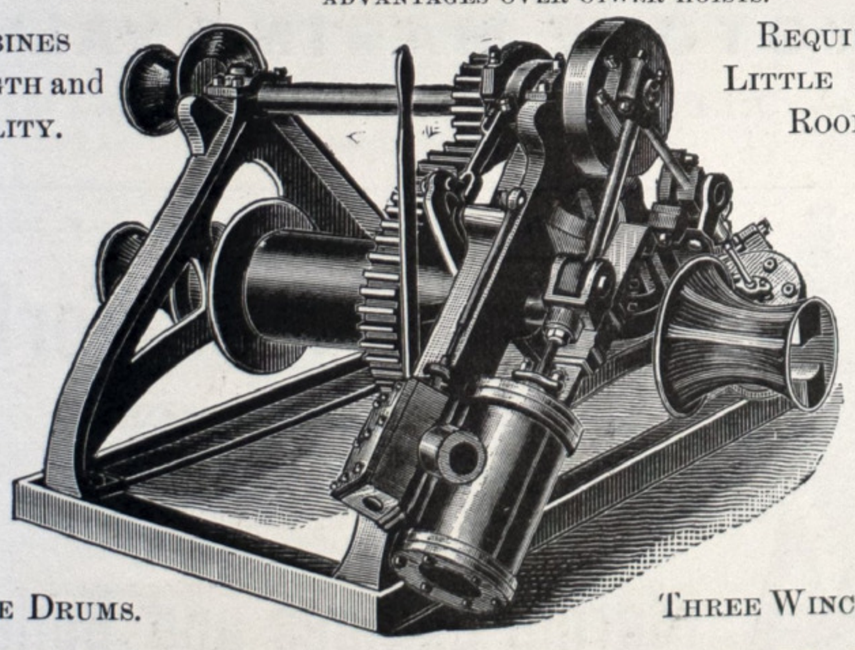

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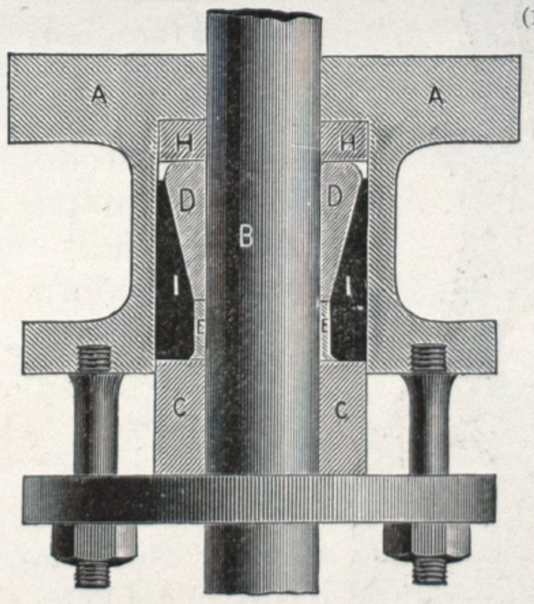

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Can be applied **without disconnecting** the rod, prevents blowing or leaking of steam, cutting of rods or the blistering or rusting of rods when engine is not in use.

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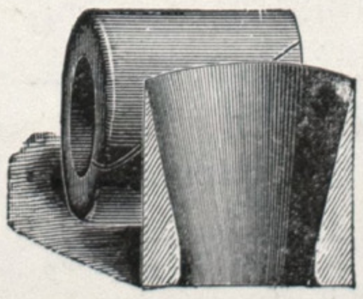

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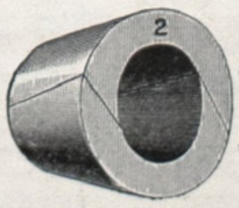

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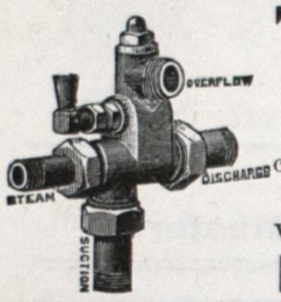

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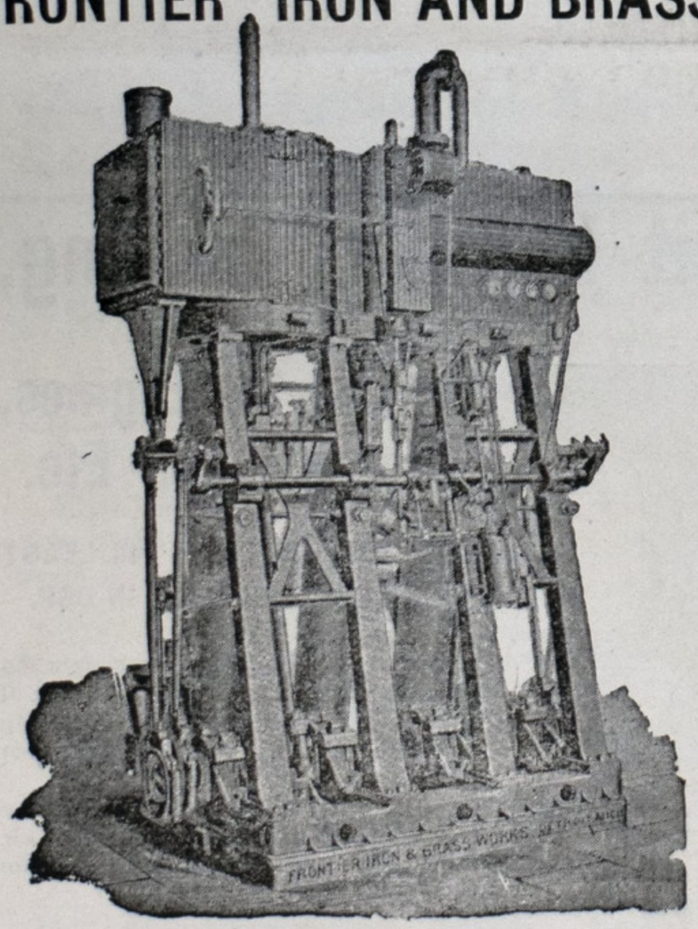

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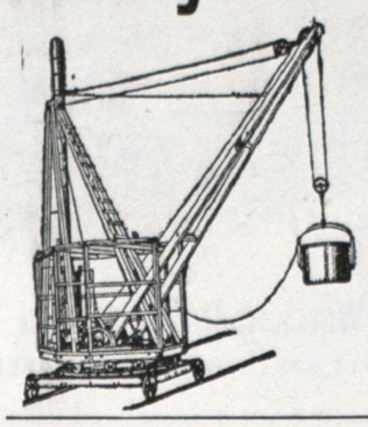

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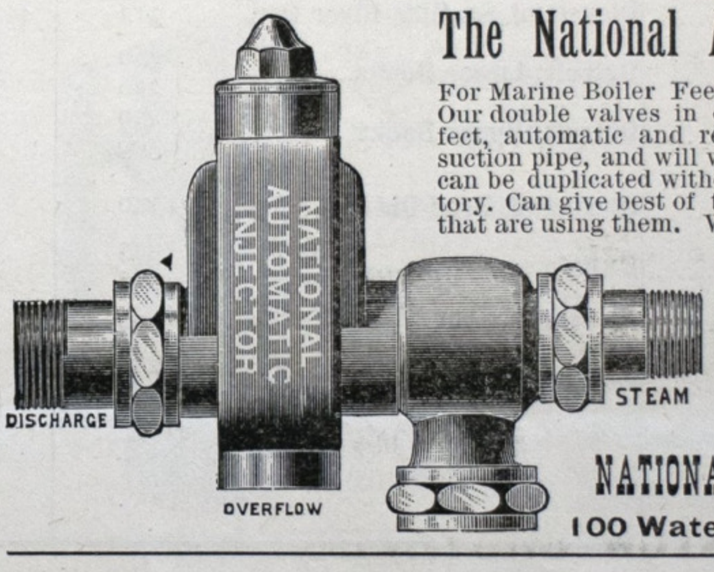

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These RED, AIR AND FOOT VALVES, are the Best Rubber Valves made.

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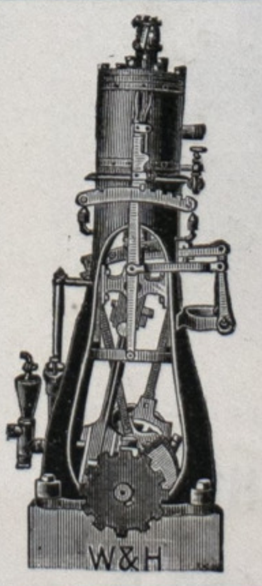

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